Transforming to a broad and global energy company

Olav Aamlid Syversen, Head of EU Affairs

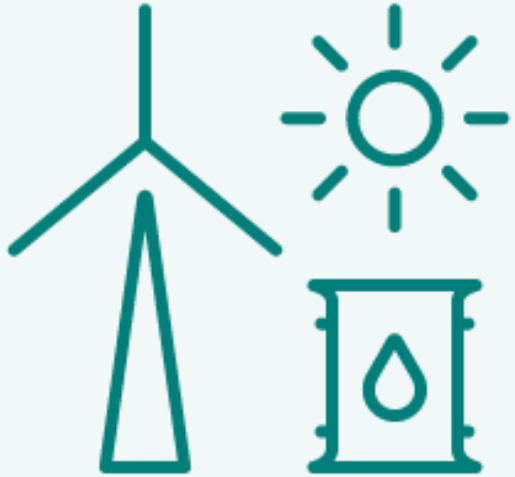
PURPOSE

Turning natural **resources** into energy for people and progress for society

STRATEGY

Always safe

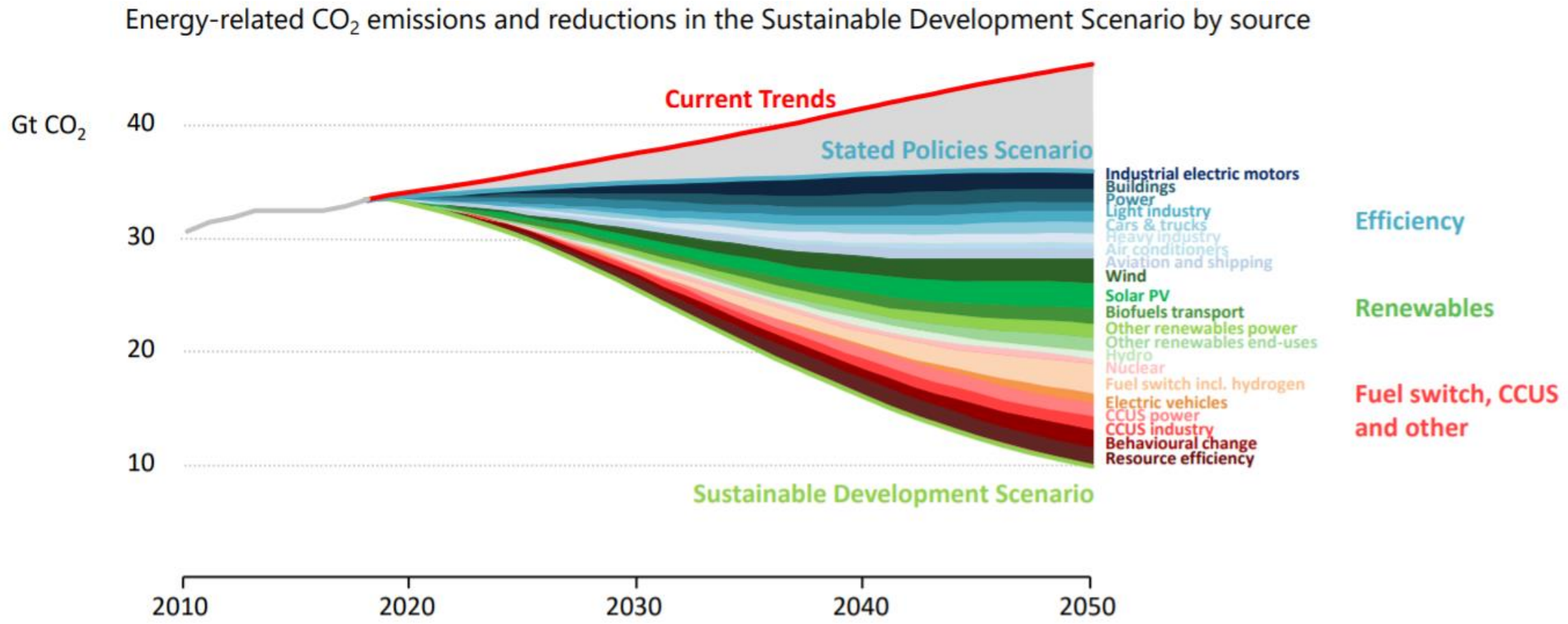
High value



Low-carbon


#COP25

Clean energy transition requires a host of measures and technologies

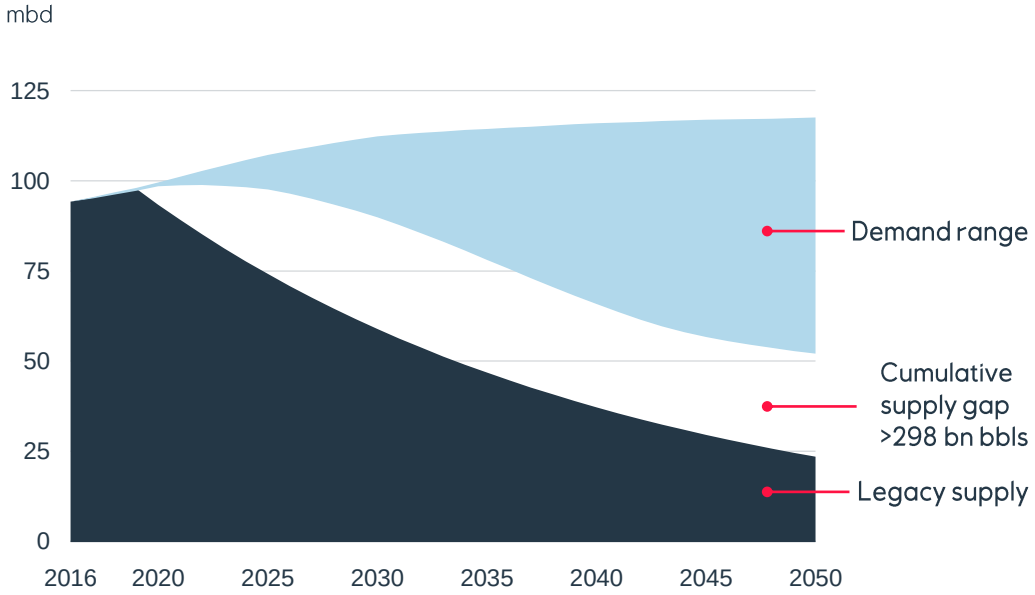


A host of policies and technologies will be needed across every sector to keep climate targets within reach, and further technology innovation will be essential to aid the pursuit of a 1.5°C stabilisation

Source: IEA, WEO 2019

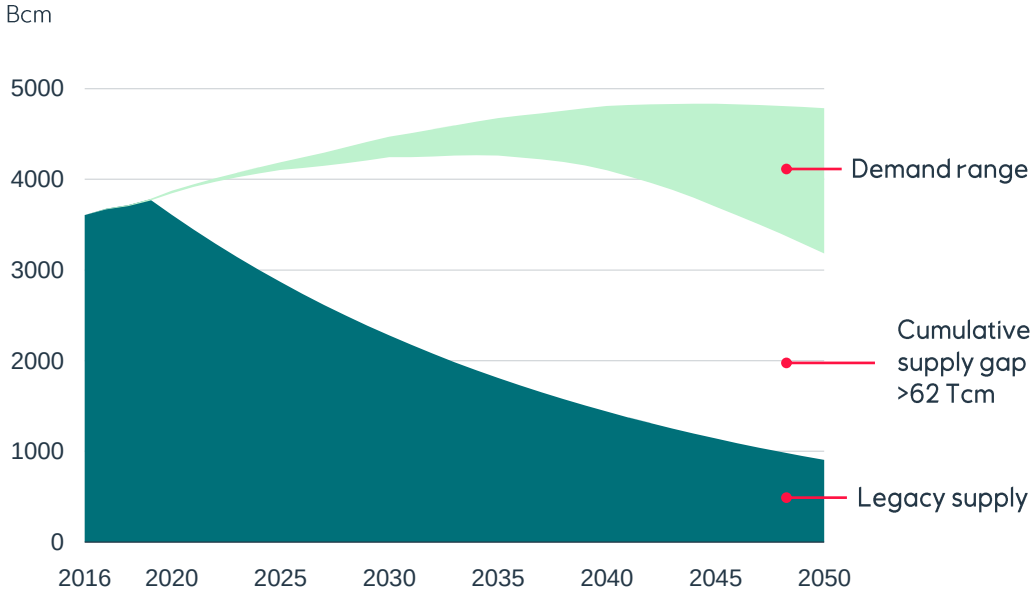
Stop investing in new oil and gas investments is premature

Oil demand and supply from existing fields



Source: IEA (history), Equinor (projections)

Gas demand and supply from existing fields

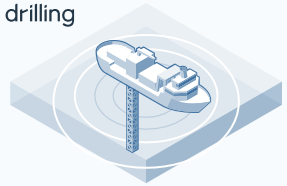


Source: IEA (history), Equinor (projections)

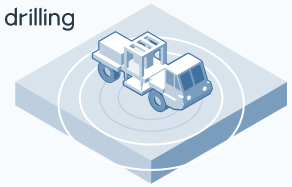
Our value chain

Exploration

Offshore seismic and drilling

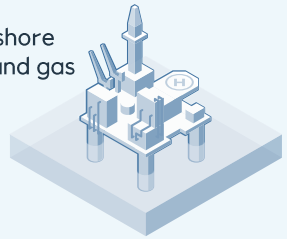


Onshore seismic and drilling

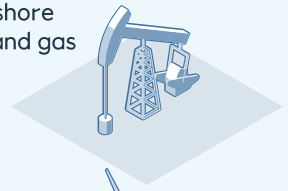


Development and production

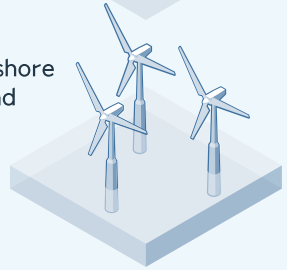
Offshore oil and gas



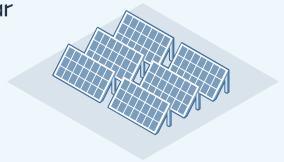
Onshore oil and gas



Offshore Wind

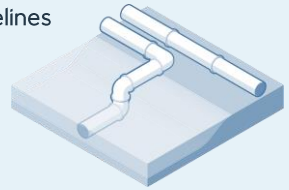


Solar

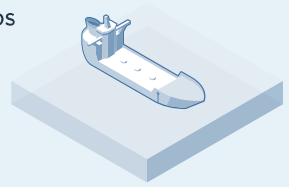


Transportation

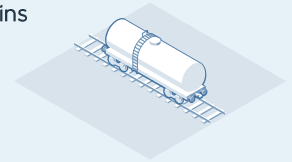
Pipelines



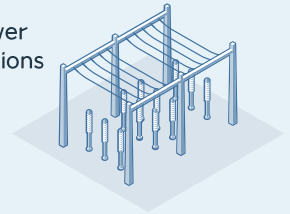
Ships



Trains

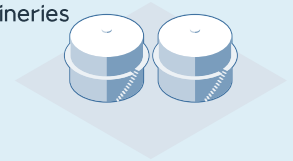


Power stations

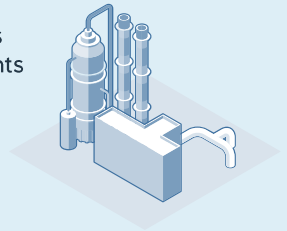


Processing and refining

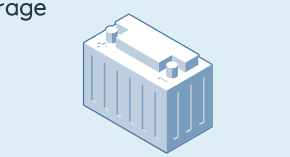
Refineries



Gas plants



Energy storage



Marketing and trading

Oil

Gas

Electric

An industry leader in carbon intensity

Our upstream oil and gas portfolio carbon intensity commitment:

From 10 to 8 kgCO_2 per boe by 2030.

(From 6.1 gCO_2/kWh to 4.9 gCO_2/kWh)

Electricity is today produced at the following intensity in:

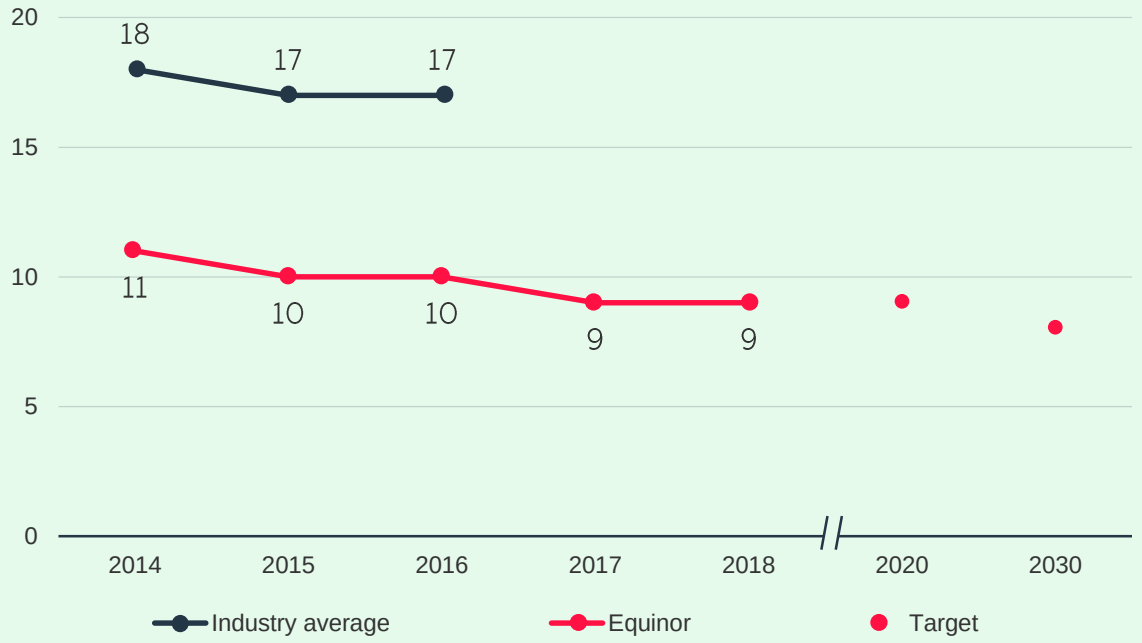
Sweden and France: ~ 60g gCO_2/kWh

Germany: >300 gCO_2/kWh

Poland: >600 gCO_2/kWh

Upstream CO_2 intensity

kg CO_2 per boe



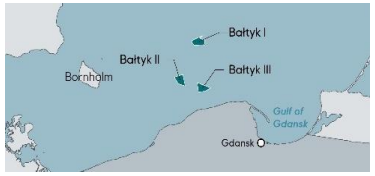
Source: IOGP/ Equinor

Building a global offshore wind major

In production

Bottom fixed			Floating
Sheringham Shoal 317MW	Dudgeon 402MW	Arkona 385MW	Hywind Scotland 30MW

Project pipeline



Bottom fixed			Floating	
Dogger Bank, UK 3.6GW	US East Coast ~3.5GW	Baltyk I, II &III, Poland ~2.5GW	Hywind Tampen, Norway 88MW	Positioning for growth 12 GW potential by 2030

The Dogger Bank Wind farms

3 projects (1.2 GW) – developed in phases

3.6 GW
Combined capacity

12 MW
Wind Turbines (WTGs)

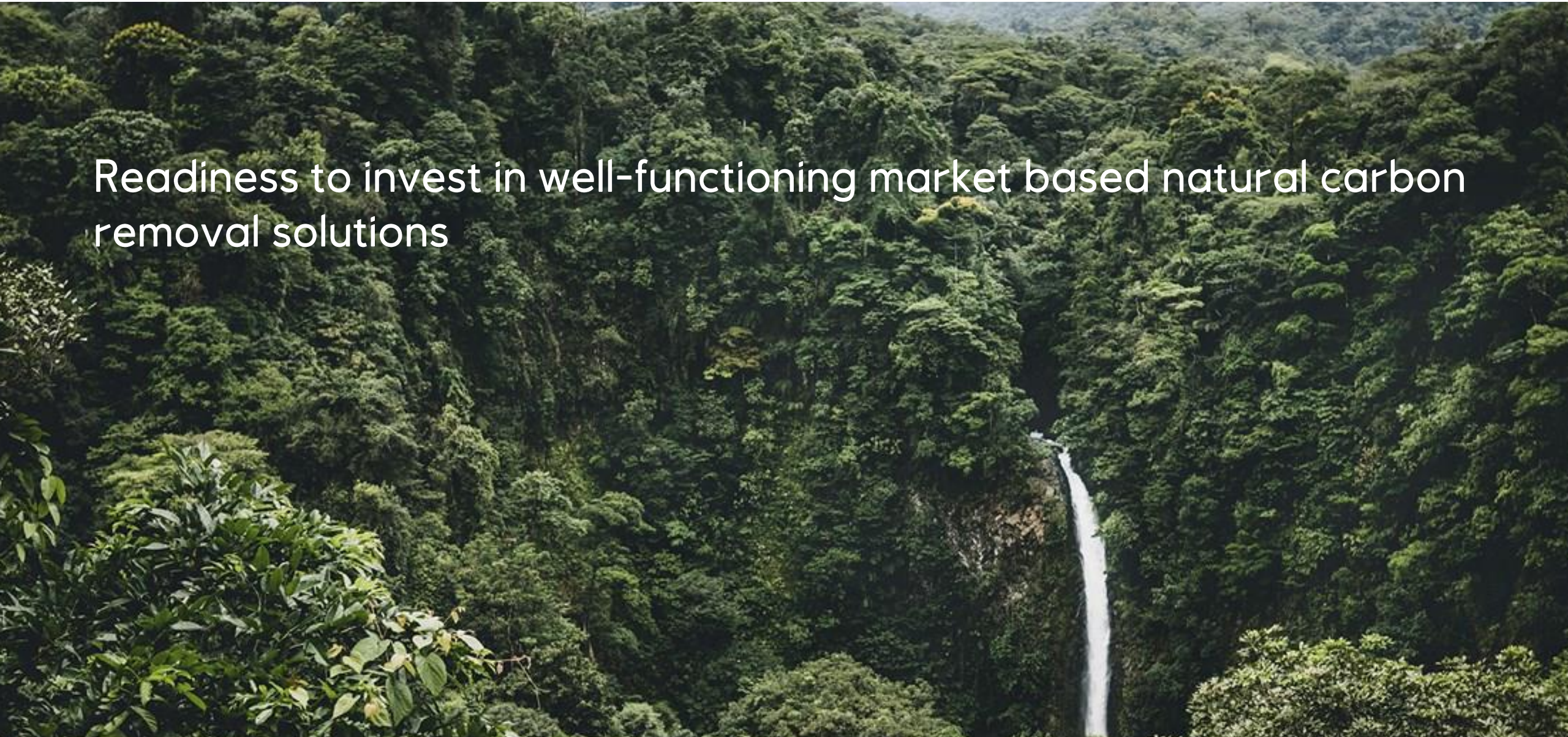
Expected to cover 5% of UK's energy generation

50/50 joint venture between Equinor and SSE Renewables*

First power generation 2023

* Lead operator in construction phase and Equinor in the operations phase

Readiness to invest in well-functioning market based natural carbon removal solutions



Our CCS and hydrogen activities

Market Build (2019 – First Operations)

2023 — Northern Lights

Applications:
- CCS for industry

2026 — HyDemo Norway

Applications:
- Hydrogen for maritime

2028 — Clean Steel

Applications:
- Hydrogen for industry (steel)

2026 — Zero Carbon Humber

Applications:
- Hydrogen for industry
- Chemicals
- Synthetic fuels
- BECCS
- Hydrogen power

2026 — Clean Gas Project

Applications:
- Post-combustion CCS power generation
- CCS for industry
- BECCS
- Hydrogen production

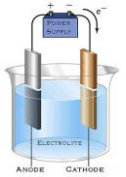
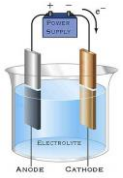
2027 — H2 Magnum

Applications:
- Hydrogen power

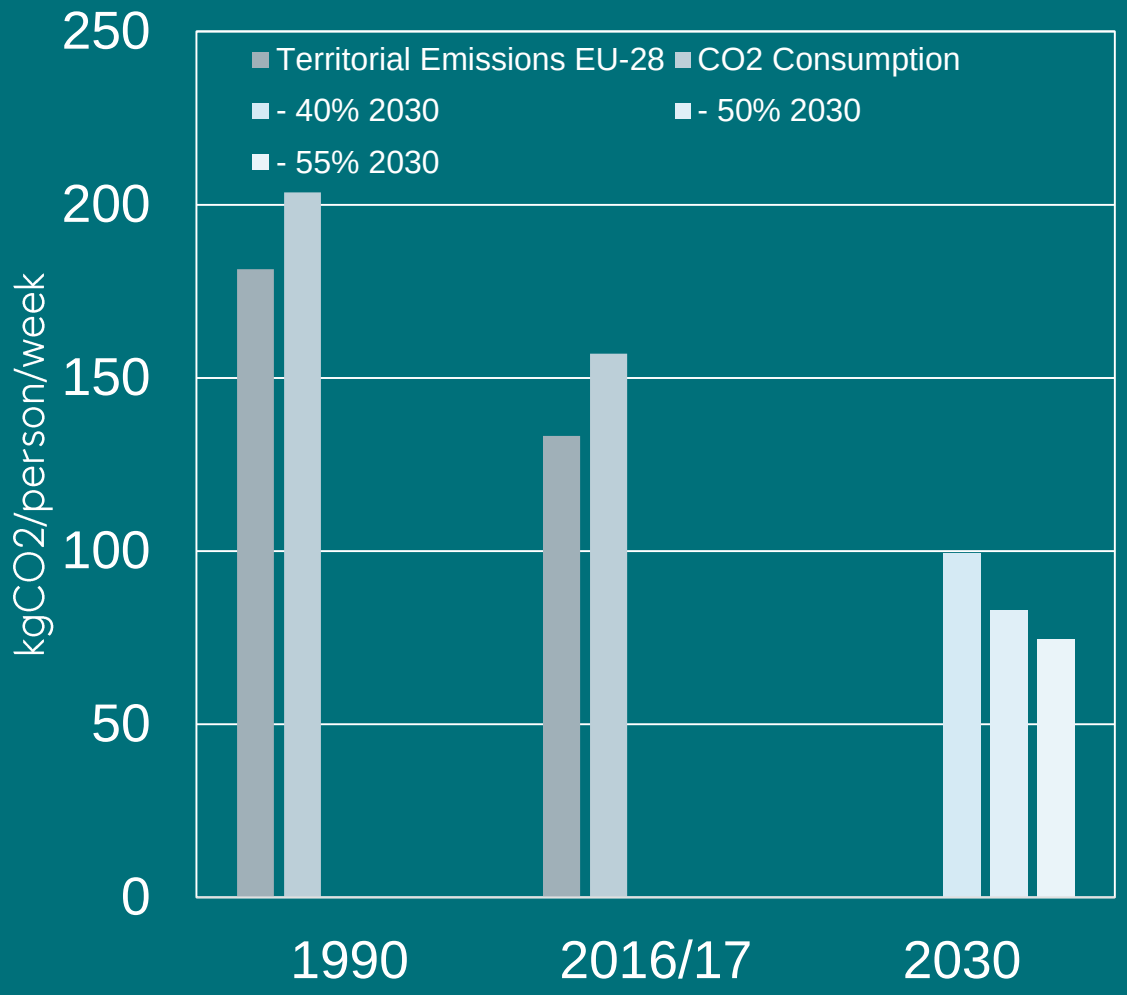
Why blue hydrogen?

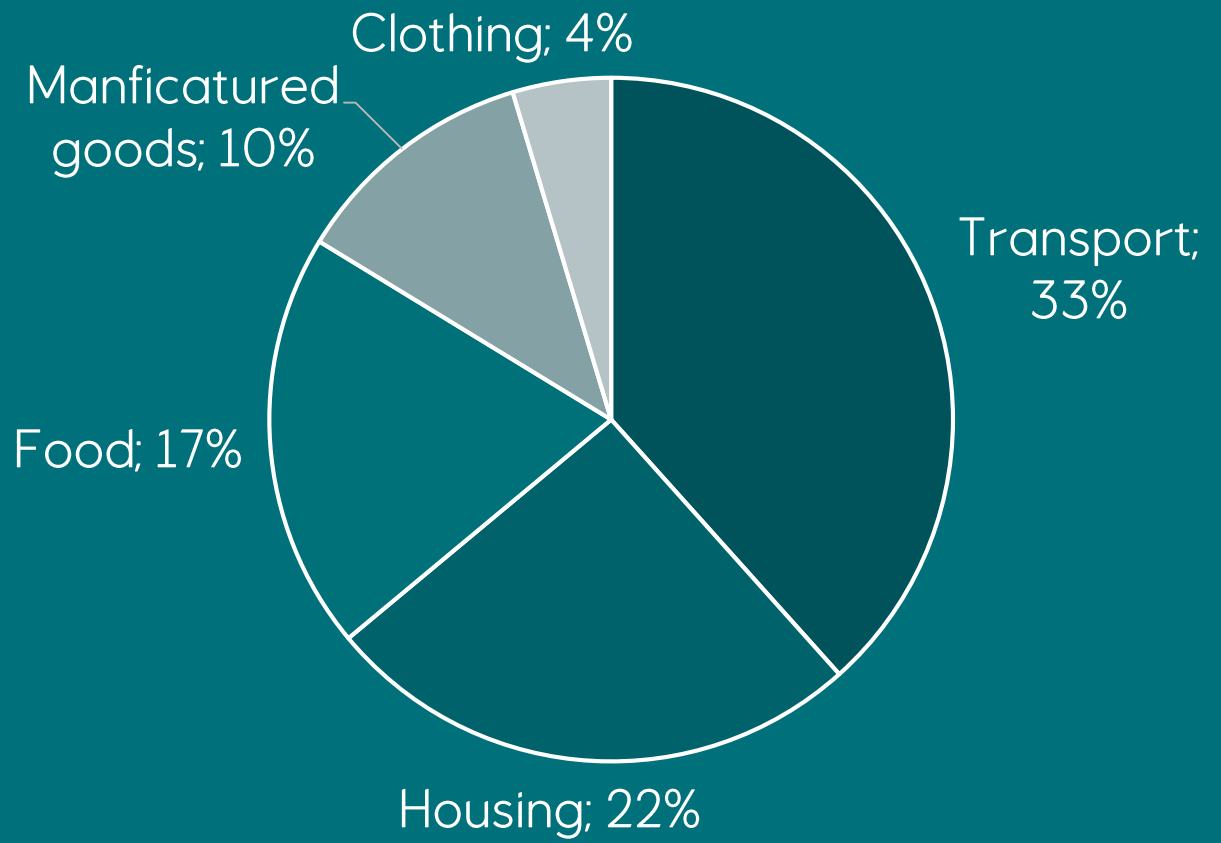
Europe currently consumes 8000 TWh of oil and gas

How can half of that be converted to decarbonized hydrogen?
(assuming all new renewable generation is channeled towards electrification of the remaining)

REQUIREMENTS	Green Hydrogen	Blue Hydrogen
Energy Source	 x 150 New Plants	Already Exists (Natural Gas)
Hydrogen Capacity	 x 10.000 (10 MW units)	 x 500 (1 GW units)
vs.		
Existing Supply Chain *annual global deliveries*	 x 100 (10 MW units)	 x 100 (1 GW units) SMR, ATR, LNG

EU household carbon footprint and budget



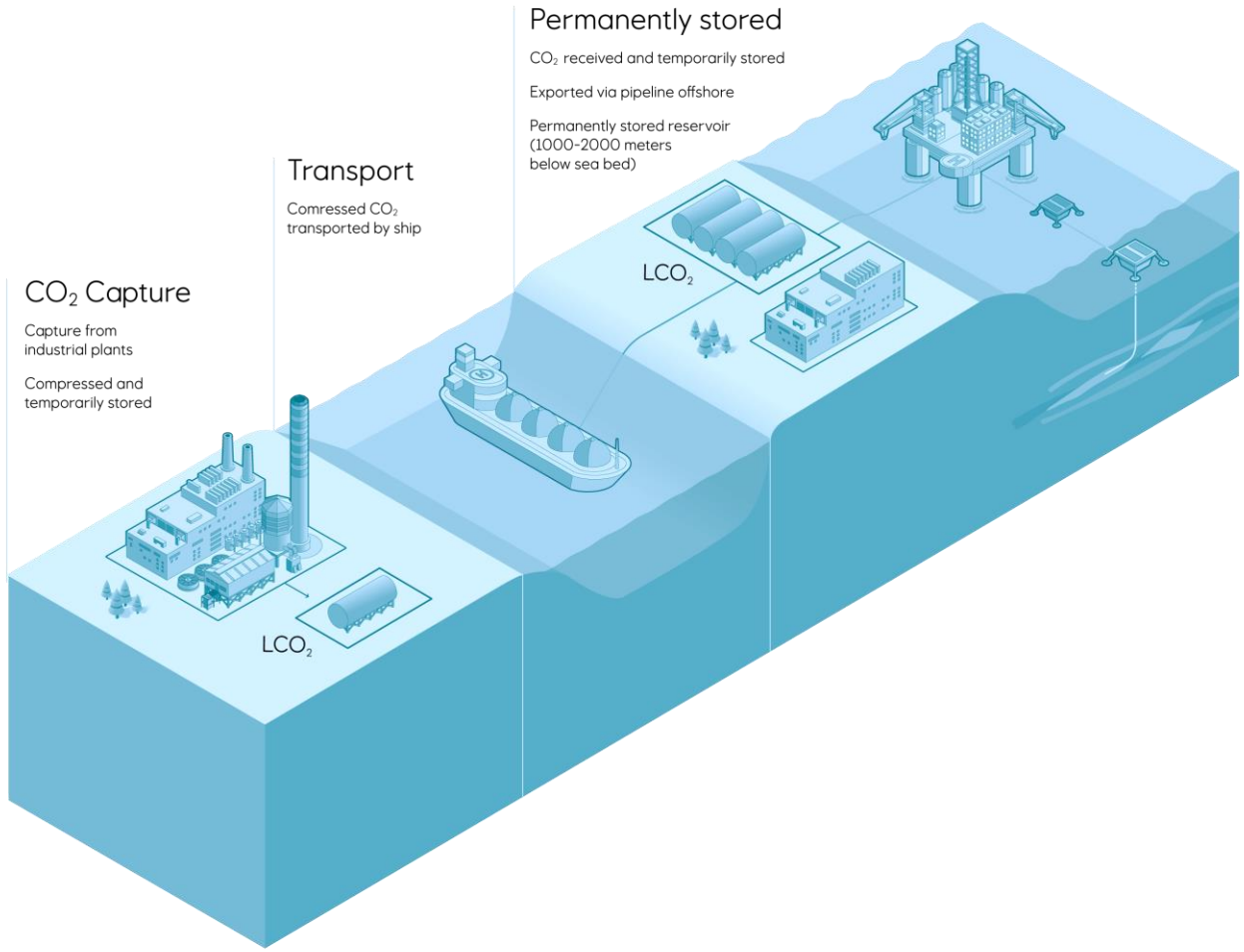


Source: Environ. Res. Lett. 12 (2017) 054013,, Equinor

75 - 100 $kgCO_2/week$


Thank you for your attention
equinor

Northern Lights – A European PCI for CO_2 transport and storage network



Link to animation: LINK

Planning for a CO_2 transport and storage solution on the NCS

Capturing CO_2 from onshore industrial plants and storing it safely in suitable rock formations offshore

Capacity to store CO_2 ~1,000 years of Norwegian emissions on the NCS

Collaboration between Equinor, Total and Shell

In September 2019 MoUs signed with 7 European companies

Low carbon production from Johan Sverdrup

The third largest oil field on the Norwegian continental shelf, with expected resources of 2.7 billion barrels of oil equivalent

Estimated combined income from production amounts to 1430 billion NOK (2018) over the life of the field. Income to the Norwegian state expected - more than 900 billion NOK

The field is powered with electricity from shore. CO2 emissions are estimated at just 0.67 kg CO2 per barrel. CO2 emissions reductions from the field estimated at more than 620,000 tonnes of CO2 per year, totaling more than 25 million tonnes of CO2 over the life of the field

What carbon budget for EU citizens?